75622.P0018 Patent

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BOARD OF PATENT APPEALS AND INTERFERENCES

In Re Application of:

Jerrell P. Hein

Application No: 09/608,743

Filed: June 30, 2000

For: SUBSCRIBER LINE INTERFACE CIRCUITRY WITH COMMON BASE AUDIO ISOLATION STAGE

Examiner: Briney III, Walter F.

Art Unit: 2615

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REQUEST FOR REHEARING IN RESPONSE TO BOARD'S DECISION

The Board rendered a decision in the above-referenced matter that was mailed August 28, 2009. This request is made within the two month time period set forth.

Appellant respectfully requests consideration of this Request by the Board of Patent Appeals and Interferences

REQUEST FOR REHEARING OR IN THE ALTERNATIVE A REQUEST FOR RE-OPENING PROSECUTION

Applicant respectfully requests the Board to grant the applicant an opportunity for a re-hearing or alternatively to permit appellant to address certain arguments by re-opening prosecution. The basis for these requests is set forth below.

HISTORY OF THE APPLICATION

The following dates are provided for convenient reference:

DESCRIPTION	DATE
Application Filed	June 30, 2000
Appeal Brief filed	September 24, 2007
Supplemental Brief filed	November 23, 2007
Examiner's Answer	February 22, 2008
Board Decision	August 28, 2009

SUMMARY OF DECISION

Claims 1, 3, 5-7, 9, 10, 12, 15, 16, and 18 were pending in the application. The Examiner rejected claims 1, 3, 5-7, 9, 10, 12, 15, 16, and 18 under 35 U.S.C. § 103 as being unpatentable over the combination of U.S. Patent No. 5,274,702 of Rosch ("Rosch") and U.S. Patent No. 4,151,482 of Robe ("Robe"). The Examiner rejected claims 1, 5, 9, and 15 under 35 U.S.C. § 103 as being unpatentable over Rosch in view of U.S. Patent No. 4,284,958 of Pryor ("Pryor"). The Board affirmed the claim rejections.

REQUEST FOR REHEARING

Appellant requests a rehearing based upon a lack of adequate due process (substantantive and/or procedural) in the Board's review of this case. Appellant

submits that 1) the Board erred in holding the appellant to an improper evidentiary standard when excluding/ignoring evidence and arguments; 2) the Board ignored the admissions by the Examiner which supported the Appellant's contentions; and 3) although the Board correctly pointed out a change in the legal standard of obviousness as a result of the KSR decision, the Board failed to properly consider that the references *taught away* from the combination.

OBVIOUSNESS STANDARD

With respect to the legal standard for obviousness, Appellant acknowledges that the *KSR* decision was rendered earlier in the year in which the Appeal Brief was initially filed. Thus appellant acknowledges that the prior standard as set forth in *In re Vaeck*, 20 USPQ2d 1438 (Fed. Cir. 1991) of a "lack of teaching, suggestion, or motivation to combine the references" is no longer a sufficient basis for contradicting a *prima facie* basis of obviousness. However, there is a distinct difference between a "lack of a teaching" (i.e., no evidence) and "teaching away from" (i.e., evidence supports position contrary to what the evidence is promulgated for). Appellant respectfully submits that even under the *KSR* standard, the Appellant properly rebutted the Examiner's position by arguing that the references taught away from the combination proposed by the Examiner. However, such arguments appear to have simply been ignored.

The Board posed the legal issues as: "have Appellants shown that the Examiner erred in finding motivation to combine Rosch with Robe; and have Appellants shown that the Examiner erred in finding motivation to combine Rosch with Pryor. (Decision, pp. 4, 5). Appellant respectfully submits that Appellants argument relating to a lack of motivation was bolstered with arguments directed to *teaching away* from the proposed combination. Although lack of motivation may no longer be a sufficient basis for a finding of nonobviousness, Appellant respectfully submits that a "teaching away" is still a valid basis for a finding of nonobviousness under *KSR*. Accordingly, Appellant respectfully submits that in view of *KSR* the issue of an absence of motivation to combine Rosch with Robe or Pryor may have been moot, but the Board should

have considered Appellant's arguments relating to "teaching away" when determining whether the Examiner erred in combining the references.

EVIDENTIARY STANDARD RELIED UPON BY THE BOARD

The Board's decision seems to be based upon at least in part on an alleged lack of evidence for subject matter that is well-known in the art or for which the Board should have at least taken judicial notice of. Appellant respectfully submits that the appellate process to-date and the rationale stated by the Board invokes procedural and substantive due process concerns.

For example, the Board surprisingly claimed:

> Appellants have not provided sufficient evidence to support the statement that common base transistor amplifier stages must provide less than unity gain.

(Decision, p. 9)

Appellant had no reason to believe this point was even debated. This fact is so fundamental to transistor amplifier design that appellant respectfully submits the Board is holding Appellant to an irrational evidentiary standard. The Examiner has not disputed this point. Appellant's own specification sets for the gain as $\alpha = \frac{\beta}{\beta + 1}$, where β is the ratio of the collector current to the base current for a BJT and α is the ratio of the collector current (output) to the emitter current (input). (see, e.g., Specification, p. 14) Since the base and collector currents sum to the emitter current, α (i.e., the ratio of collector to emitter current) must always be less than unity.

Moreover, the filewrapper includes references cited by the Examiner that support Appellant's remarks. Consider, for example, the Examiner's discussion of Millman, et al., *Integrated Electronics: Analog and Digital Circuits and Systems*, "The CB Configuration", 1972, p. 254 ("Millman") which the Examiner cited in an Office Action dated July 20, 2003. The Examiner's excerpts of Millman provided a convenient summary of the properties of different types of transistor amplifier stages on page 254, Table 8-5. Of note are two properties: the current

gain, *Ai* and the output impedance R_O. The current gain for a common base amplifier stage is clearly indicated as less than unity ("Low (0.98)"). The output impedance is identified as "High". Please also note that when compared with the common emitter and common collector configurations, the common base transistor amplifier stage is the *only* configuration with a gain less than unity. Certainly one would not seek out a common base amplifier stage if a gain of greater than unity is desired. Please also note that if one is seeking a low output impedance, the common base configuration would be avoided since its output impedance is higher by more than an order of magnitude when compared to the other configurations.

Appellant respectfully submits that there was no reasonable expectation of needing to provide exhibits to support Appellant's remarks that a common base transistor amplifier stage had a gain less than unity and the Examiner had not disputed whether a common base transistor amplifier stage had a gain less than unity. The Examiner himself had cited references supporting Appellant's position that are already of record for this application. Finally, Appellant's statements were consistent with what is well-known in the art. The Board appears to be holding Appellant to an irrational or unascertained evidentiary standard.

Appellant respectfully submits that the Board's refusal to give weight to facts well-known in the art or set forth in the very references relied upon by the Board for its decision was arbitrary and capricious and resulted in unfair prejudice when considering Appellant's arguments.

BOARD'S FINDINGS OF FACT ARE CONTRARY TO THE REFERENCES OR SUPPORT APPELLANT'S POSITION RATHER THAN EXAMINER'S

The Board has challenged a number of factual points that the Appellant had no reasonable basis to believe were issues in this appeal. Moreover, the Board's conclusions as to these facts are simply not supported by the evidence of the filewrapper or the references specifically cited for this appeal.

For example, the Board dispensed with appellant's arguments in part with the following remark:

> First, Appellants mistakenly argue that Rosch teaches unity gain or greater for its amplifier stages. While Rosch discloses that the amplifiers provide unity gain in order to obtain maximum output impedance and maximum bandwidth, *there is no indication that Rosch teaches that the amplifiers provide greater than unity gain.* FF 4, 5. In fact, Rosch discloses that the amplifiers need not necessarily have unity gain but the gain is desirably kept small FF 5. *This indicates that the gain is unity or may even be less.*

(Decision, p. 9)(*emphasis added*)

Appellant respectfully submits that the Board is in error with respect to its characterization of Appellant's arguments, the characterization of the Rosch reference, and the result is that the Board has erred in its conclusion.

Rosch *does* teach unity gain or greater as stated by Appellant. In particular, Rosch states:

> It is observed that the amplifiers 132 and 134 need not necessarily have a gain of exactly unity as described here and as illustrated in FIG. 3 . They may alternatively provide a desired gain, providing a proportional relationship between the d.c. potentials at their inputs and outputs. *However, as any such gain decreases the bandwidth and increases the output impedance of the amplifiers, it is desirably kept small and approximates to a gain of unity.*

(Rosch, col. 10, lines 30-38)(*emphasis added*)

The issue the Board has now raised is "what does Rosch mean by a 'desired gain' that is not unity". For example, does Rosch mean greater than unity, less than unity, or can either alternative be selected?

Appellant respectfully submits that the product of the closed loop gain and the bandwidth of an amplifier is constant. This is well-known and one does not need to be "skilled in the art" to be aware of such a fact regarding amplifiers. Indeed, it is the basis for Rosch's own conclusion emphasized above. However, if the Board is unwilling to take Official Notice of this fact, Appellant respectfully requests an opportunity to provide exhibits acceptable to the Board to support

this well-known fact or to remand to the Examiner to re-open prosecution for the determination of such a fact to the Board's satisfaction.

The closed loop gain of a unity gain amplifier is "1". The purpose of connecting the output to the inverting input is to create the closed loop for Rosch's amplifier. Rosch has introduced the possibility of a "desired gain" other than unity, *but warns that a decrease in bandwidth would result.* Since the product of the gain and the bandwidth is a constant, *the bandwidth is reduced only when the gain is increased.* Thus Rosch clearly teaches a gain of unity or greater and teaches away from a gain of less than unity. Appellant's characterization of the reference was accurate. The Board's characterization of Rosch and the Board's conclusion are simply not supported by Rosch. R

The Board then claimed "Appellants have not provided sufficient evidence to support the statement that common base transistor amplifier stages must provide less than unity gain." (Decision, p. 9). Here again the Board seems to be holding Appellant to some unknown evidentiary standard when discarding Appellant's arguments. Although the concern about the Board's evidentiary standards with respect to this issue was raised above, Appellant reiterates: 1) the fact that a common base transistor amplifier stage has a less than unity current gain is well known in the art; 2) this fact was not an issue disputed by the Examiner; 3) support for this proposition is found in the Specification at page 14 (referring to transistor alpha values); 4) the Examiner cited references (e.g., Millman, Table 8-5, pg. 254) confirming a current gain of less than unity for a common base transistor amplifier stage.

The issue of whether a common base amplifier had a gain of less than one was not an issue at the time of the appeal. The gain issue was a differentiator between appellant's claimed subscriber line interface circuitry architecture and the reference relied upon by the Examiner which was *simply described by function.* The Examiner relied upon the Robe reference to teach a common base transistor amplifier stage. The Examiner admitted that the Rosch reference failed to teach a common base transistor amplifier stage. Appellant maintains that the functional

requirements set forth by Rosch taught away from utilizing an amplifier stage having a gain of less than unity or a high output impedance. Thus appellant respectfully submits that Rosch *taught away* from the use of a common base transistor amplifier stage and that the combination with Robe for the sole purpose of incorporating a common base amplifier stage would be nonobvious.

Although the Board correctly noted Rosch's gain is set near unity to minimize output impedance in one location (Decision, p. 4), the Board has also mistakenly concluded that Rosch's gain is set to unity to maximize output impedance at another location. (Decision, p. 9). Rosch clearly warns against increasing the desired gain because it would result in an increased output impedance. (Rosch, col. 10, lines 30-38). Rosch has clearly identified increased output impedance as an undesirable feature. As initially noted by the Board, *Rosch seeks to minimize the output impedance* by reducing the gain to as close to unity such that the gain can be approximated as unity. (Rosch, col. 10, lines 30-38). Appellant respectfully submits that Rosch indisputably teaches 1) a gain of unity or greater (but close to unity), and 2) a low output impedance for the D.C. buffer amplifiers. *These traits are relevant to the choice of amplifier and relevant to the legal issue of whether Rosch teaches away from the use of a common base amplifier stage.*

Appellant respectfully submits that it is well known that a common base transistor amplifier stage has the highest output impedance of the different transistor amplifier configurations. A common base transistor amplifier stage also must have a less than unity gain when used as a current amplifier. Thus if the application (such as Rosch's) demanded a gain of unity or greater and a low output impedance such a reference teaches away from a common base transistor amplifier stage which suffers from a less than unity current gain and a high output impedance. (see., e.g., Millman, Table 8-5, pg. 254)

The Board also remarked that "the Examiner found that Rosch teaches the claimed limitation since Rosch teaches receiving an outgoing signal Rx via a receive line wherein the signal Rx is a voiceband signal" and that "Appellant's statement merely concludes that this finding is in error without citing evidence

or further explanation." (Decision, p. 9). However, Appellant notes that the stated finding falls far short of what was claimed. Rosch's actual outgoing voiceband signal is a *voltage* signal that is output by amplifier 104 and carried to the input of D.C. unity gain voltage amplifier 132. The Board apparently ignored the other limitation that required the linefeed driver control signals to be carried as currents on the same line. The closed loop unity gain nature of voltage amplifiers 132, 134 indicates that the input signal to these amplifiers is the linefeed driver signal itself – not the linefeed driver control signal. Indeed, Appellant respectfully submits that the linefeed driver control signals are actually provided as inputs to 142, 144, 148, and 150. These amplifiers cooperate to provide the actual linefeed driver to the unity gain amplifiers. The inputs to 142, 144, 148, and 150 are carried by *separate* control lines that do not carry the voiceband signal. Appellant submits that the Examiner improperly characterized the signal presented to voltage amplifiers 132, 134 as currents *and* suggested that a linefeed driver *control* current is being carried by the same line carrying the voiceband signal. No such linefeed driver control current is carried by the signal line carrying the voiceband signal.

Appellant respectfully submits that since the Examiner has cited Pryor for the proposition of teaching a common base amplifier stage, the same arguments apply with respect to the Examiner's proposed combination of Rosch and Pryor. In particular, there is no teaching or suggestion within either of Pryor or Robe to use their inventions in conjuction with subscriber line interface circuitry. The Board is relying entirely upon Rosch and substituting Pryor's or Robe's amplifiers in place of Rosch's amplifiers to achieve such a result. But Rosch teaches away from using any amplifier having the characteristics of a common base transistor amplifier stage (see, e.g., Millman, Table 8-5, pg. 254; Rosch, col. 10, lines 30-38). The only real basis for this substitution of a common base transistor amplifier stage was the hindsight of appellant's disclosure.

Appellant respectfully requests an opportunity for a rehearing for the Board to consider or reconsider evidence that the Board was previously unwilling to acknowledge or to take Official Notice of. The Board does not

appear to have decided the appeal on the substance of the arguments made in the appeal brief. The Board's decision seems to be based upon an alleged lack of evidence for subject matter that is well-known in the art or for which the Board should have at least taken Official Notice of and/or which was set forth in the very references that the Board relied upon in its decision. Appellant respectfully submits that the Board's approach of disregarding well-known facts or facts set forth in the references that the Board relied upon in order to discount Appellant's arguments was arbitrary, capricious and invokes procedural and substantive due process concerns regarding the Board's decision.

ALTERNATIVE REQUEST FOR RE-OPENING PROSECUTION

In the event the Board is unwilling to grant a rehearing, appellant respectfully requests re-opening of prosecution to permit the applicant to address the Board's remarks regarding lack of evidence.

CONCLUSION

Appellant respectfully requests a rehearing in view of the arguments made above. If there are any issues that can be resolved by telephone conference, the undersigned representative of the appellant may be contacted at **(512) 858-9910.**

Respectfully submitted,

October 28, 2009
Date

William D. Davis
Reg. No. 38,428